

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference D81282PC	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/EP2004/008590	International filing date (day/month/year) 30.07.2004	Priority date (day/month/year) 31.07.2003
International Patent Classification (IPC) or national classification and IPC B01J19/32, B01J19/24, C07C57/04, C07C45/35, B01J35/04, B01J37/02, B01J37/00		
Applicant STOCKHAUSEN GMBH		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>5</u> sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>	
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>	

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-33 as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 1-24 received by this Authority on 04.05.2005 with letter of 02.05.2005
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets 1/3-3/3 as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims		YES
	Claims	1-24	NO
Inventive step (IS)	Claims		YES
	Claims	1-24	NO
Industrial applicability (IA)	Claims	1-24	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
<p>1. The new claims submitted with the letter of 2 May 2004 do not meet the requirements of PCT Article 34(2)(b). In particular, the feature that "the catalyst support (1) is a thermal panel" has been deleted from claim 1. The description (see pages 15 and 16) indicates that the catalyst support is either metallic or ceramic. Amended claims 1 and 13 at present encompass all materials which can be used as a support in this type of system. Consequently, since no basis could be found for this amendment in the application as originally filed, the requirements of PCT Article 34(2)(b) are not met.</p> <p>2. Claims 1 and 13 have therefore been examined on the basis of the assumption that the catalyst support is a metallic or ceramic support.</p> <p>The present application does not meet the requirements of PCT Article 33(1) because the subject matter of claims 1 and 13 is not novel (PCT Article 33(2)).</p> <p>D1 discloses catalyst-coated supports for reactors in which strongly exothermal gas phase reactions occur. The supports may comprise (thermal) panels (see claim 5).</p>			

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Coating can be carried out by various processes (see claim 11). An intermediate layer made of Al_2O_3 , for example, which improves the adherence of the catalyst to the thermal panel (see paragraph 28 of D1) can be applied between the support and the catalytic active component, which is produced by a wash-coat process (see paragraph 46).

Although D1 does not state that the coating of the catalyst support shows cracks of a total length of at least 500 m/m^2 and an adhesive pull strength of at least 500 N/m^2 , the same materials (alumina on steel) appear to be used in that catalyst support system as in the present application. Aluminium oxide, Al_2O_3 (as well as other materials), has a coefficient of thermal expansion ranging from 3 to $8.5 \cdot 10^{-6}/\text{K}$. All steels (as indicated by the applicant on page 13 of the application) have coefficients of thermal expansion which are at least 10% or more higher than that of Al_2O_3 .

The applicant states on page 4, line 28 to page 5, line 4, of the application, and in his letter of 2 May 2005, that differences between the coefficients of thermal expansion of at least 10% favour crack formation.

Thus it appears that the catalyst support disclosed in D1, which comprises a metallic support made of steel coated with Al_2O_3 , also has cracks and an adhesive pull strength in the claimed range, even if these parameters are not indicated in D1.

Consequently, the subject matter of the claims should not

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be considered novel over the disclosure of D1.

The same argument applies, *mutatis mutandis*, to the subject matter of claim 13.

3. Claims 2-12 and 14-24 do not contain any features which, in combination with the features of any claim to which they refer, meet the PCT novelty or inventive step requirements.

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. It appears from page 4, lines 21-26, of the description, that the following feature is necessary for the definition of the invention:

(a) the coating has an adhesive pull strength of at least 500 N/m².

Since independent claim 13 does not contain this feature, it does not meet the requirement of PCT Article 6 in conjunction with PCT Rule 6.3(b), according to which each independent claim must include all the technical features that are necessary for the definition of the invention.